

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-3 are currently being prosecuted. The Examiner is respectfully requested to reconsider his rejections in view of the amendments and remarks as set forth below.

Rejection Under 35 U.S.C. § 103

Claim 1 stands rejected under 35 U.S.C. § 103 as being obvious over Toyota (JP2002-130510) in view of Isuzu (JP08-04546). This rejection is respectfully traversed.

The Examiner points out that Toyota shows a dual coil electromagnetic valve actuator with a permanent magnet 38 and an actuator member 24 effected by resilient members 27, 28 two electromagnets forming a core with a T-shaped first core portion 33 with a base coil 31 disposed thereabout, the first core portion being placed in a U-shaped second core portion 34. The Examiner admits that Toyota does not show that the base of the T-shaped first core portion extends through airgaps of the size much smaller than the distance between the base of the T-shaped first core portion and the base of the U-shaped second core portion.

The Examiner relies on Isuzu to teach a flux shunting core extension 13 between two core portions forming a gap smaller than the distance between the core portions bridged by the permanent magnet. The Examiner feels it would have been obvious to one having ordinary skill in the art to use the flux shunting core extensions of Isuzu in the Toyota device.

Applicants submit that claim 1 is not obvious over this combination of references. Thus, it is noted that the Toyota and Isuzu references are discussed in the Background of the Invention of the present application. Thus, Applicants are aware of their teachings. Further, it is further noted that the International Examiner found that these references were not pertinent.

Applicants agree that the Toyota reference teach the basic overall structure of the device except for the airgaps having the particular size. However, Applicants disagree with the Examiner's combination of the Isuzu teachings with Toyota. The Examiner states that Isuzu discloses the flux shunting core extension 13. However, the Examiner fails to mention that the Isuzu reference teaches an extension that is parallel to the flux in the permanent magnet 3. Applicants are enclosing a sheet with explanatory Figures exploring the arrangement of the present invention at the top where the airgaps are formed between the base portion of the T-shaped core and the side portions of the U-shaped core. However, if the Isuzu teachings are applied to Toyota, the extension would extend from the base of the U-shaped member toward the base of the T-shaped member. Isuzu describes the extension as being parallel to the flux in the permanent magnet. This type of arrangement is not in keeping with the present invention. The concept of the present invention is to cause the magnetic flux to pass through the airgaps so as to avoid passing through the permanent magnets. This will help to avoid the problem pointed out in the Background of the Invention that the permanent magnet will be demagnetized per time. Applicants submit that if the Examiner had properly combined the Toyota and Isuzu references, the resultant arrangement will be that shown in the second drawing and that such a drawing would not meet the terms of the present invention. Accordingly, Applicants submit that claim 1 defines over this combination of references.

Applicants have also added two additional dependent claims to further define over the reference. The first points out that the length of the airgap causes the magnetic flux to pass therethrough and not to pass through the permanent magnet. This would not be the case in the combination of Toyota and Isuzu. Claim 3 further defines the location of the airgap by describing the airgap extends in the longitudinal direction of the base of the T-shaped member. The combination of Toyota and Isuzu would cause the extension to be arranged in a different direction as shown by the lower drawing on the sheet, so that claim 3 likewise defines over this combination.

CONCLUSION

In view of the above remarks it is believed that the claims clearly distinguish over the patents relied on by the Examiner, either alone or in combination. In view of this, reconsideration of the rejection and allowance of all the claims are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Joe McKinney Muncy Reg. No. 32,334 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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